Please provide the following information, and submit to the NOAA DM Plan Repository.

Reference to Master DM Plan (if applicable)

As stated in Section IV, Requirement 1.3, DM Plans may be hierarchical. If this DM Plan inherits provisions from a higher-level DM Plan already submitted to the Repository, then this more-specific Plan only needs to provide information that differs from what was provided in the Master DM Plan.

URL of higher-level DM Plan (if any) as submitted to DM Plan Repository:

1. General Description of Data to be Managed

1.1. Name of the Data, data collection Project, or data-producing Program:
Marine Mammal and Coral Reef Virtual Microscope

1.2. Summary description of the data:
Virtual microscopy is a method of digitizing glass microscope specimens and viewing the produced ?virtual slides? on a computer screen. By digitizing the glass slides and serving the images over the Internet, users can zoom, pan and annotate the slides in real-time. By incorporating web conferencing abilities of the virtual slides, multiple users may view slides simultaneously and participate in collaborative interpretation of medical cases. This technology allows for the centralization of marine mammal and coral slides that can be accessed anywhere and anytime over the Internet, thereby eliminating the need to mail glass slides and risk the danger of loss or damage.

1.3. Is this a one-time data collection, or an ongoing series of measurements?
Ongoing series of measurements

1.4. Actual or planned temporal coverage of the data:
2006 to Present

1.5. Actual or planned geographic coverage of the data:
W: -180, E: 180, N: 90, S: -90
Except territorial waters

1.6. Type(s) of data:
(e.g., digital numeric data, imagery, photographs, video, audio, database, tabular data, etc.)
Document (digital)

1.7. Data collection method(s):
(e.g., satellite, airplane, unmanned aerial system, radar, weather station, moored buoy, research vessel, autonomous underwater vehicle, animal tagging, manual surveys, enforcement activities, numerical model, etc.)
Instrument: Not Applicable
Platform: Not Applicable
Physical Collection / Fishing Gear: Not Applicable

1.8. If data are from a NOAA Observing System of Record, indicate name of system:

1.8.1. If data are from another observing system, please specify:

2. Point of Contact for this Data Management Plan (author or maintainer)

2.1. Name:
Angela Collins-Payne

2.2. Title:
Metadata Contact

2.3. Affiliation or facility:
NMFS Office Of Protected Resources

2.4. E-mail address:
Angela.Collins-Payne@noaa.gov

2.5. Phone number:
301-427-8438

3. Responsible Party for Data Management
Program Managers, or their designee, shall be responsible for assuring the proper management of the data produced by their Program. Please indicate the responsible party below.

3.1. Name:
Katie A Brill

3.2. Title:
Data Steward

4. Resources
Programs must identify resources within their own budget for managing the data they produce.

4.1. Have resources for management of these data been identified?
Yes

4.2. Approximate percentage of the budget for these data devoted to data management (specify percentage or "unknown"):
Unknown

5. Data Lineage and Quality
NOAA has issued Information Quality Guidelines for ensuring and maximizing the quality, objectivity, utility, and integrity of information which it disseminates.

5.1. Processing workflow of the data from collection or acquisition to making it publicly accessible

(describe or provide URL of description):

Lineage Statement:

The National Oceanic and Atmospheric Administration (NOAA) is fusing technology and science to conserve and manage ocean ecosystems with the use of cutting-edge digital imagery called “virtual microscopy”. Virtual microscopy is the technology of converting whole glass microscope slides into high resolution digital images. Once digitized, these slides can be remotely viewed, quantitatively analyzed, and readily annotated, shared and managed, all without the use of a traditional light microscope. Viewing, analyzing, and annotating these images only requires access to a computer screen and an Internet connection. The NOS Coral Health and Disease Consortium (CHDC) and the NMFS Marine Mammal Health and Stranding Response Program (MMHSRP) identified a need to bring glass slides out of their laboratories into web-based systems and disseminate them within the marine conservationist community. The resulting collaboration established virtual microscopy at NOAA by acquiring scanning services and installing a server powered by Aperio software at Leica BioSystems. Specimens are collected and digitized for pathologists to use for analysis. The digital microscopic slides are used for research and the pathology results entered into the Aperio database.

5.1.1. If data at different stages of the workflow, or products derived from these data, are subject to a separate data management plan, provide reference to other plan:

5.2. Quality control procedures employed (describe or provide URL of description):

The digitizing glass histology and clinical research microscopic slides for corals and marine mammals are shared on the Internet among scientists via consultation using the Aperio Scan Scope software where quality assurance/quality control measures are identified for the causal agent and implemented mitigation efforts.

6. Data Documentation

The EDMC Data Documentation Procedural Directive requires that NOAA data be well documented, specifies the use of ISO 19115 and related standards for documentation of new data, and provides links to resources and tools for metadata creation and validation.

6.1. Does metadata comply with EDMC Data Documentation directive?

Yes

6.1.1. If metadata are non-existent or non-compliant, please explain:

6.2. Name of organization or facility providing metadata hosting:

NMFS Office of Science and Technology

6.2.1. If service is needed for metadata hosting, please indicate:

6.3. URL of metadata folder or data catalog, if known:

https://inport.nmfs.noaa.gov/inport/item/12773

6.4. Process for producing and maintaining metadata
(describe or provide URL of description):

Metadata produced and maintained in accordance with the NMFS Data Documentation Procedural Directive: https://inport.nmfs.noaa.gov/inport/downloads/data-documentation-procedural-directive.pdf

7. Data Access
NAO 212-15 states that access to environmental data may only be restricted when distribution is explicitly limited by law, regulation, policy (such as those applicable to personally identifiable information or protected critical infrastructure information or proprietary trade information) or by security requirements. The EDMC Data Access Procedural Directive contains specific guidance, recommends the use of open-standard, interoperable, non-proprietary web services, provides information about resources and tools to enable data access, and includes a Waiver to be submitted to justify any approach other than full, unrestricted public access.

7.1. Do these data comply with the Data Access directive?

No

7.1.1. If the data are not to be made available to the public at all, or with limitations, has a Waiver (Appendix A of Data Access directive) been filed?

No

7.1.2. If there are limitations to public data access, describe how data are protected from unauthorized access or disclosure:

The system consists of three modules: educational, clinical and research. The educational module will be accessible to the public. The clinical and research are restricted.

7.2. Name of organization of facility providing data access:

NMFS Office Of Protected Resources

7.2.1. If data hosting service is needed, please indicate:

Not Applicable

7.2.2. URL of data access service, if known:

https://virtualmicroscope.rdc.noaa.gov/

7.3. Data access methods or services offered:

The virtual microscope system provides restricted and public access to the marine mammal and coral reef data.

7.4. Approximate delay between data collection and dissemination:

90 days

7.4.1. If delay is longer than latency of automated processing, indicate under what authority data access is delayed:

Not Applicable

8. Data Preservation and Protection

The NOAA Procedure for Scientific Records Appraisal and Archive Approval describes how to identify, appraise and decide what scientific records are to be preserved in a NOAA archive.

8.1. Actual or planned long-term data archive location:

(Specify NCEI-MD, NCEI-CO, NCEI-NC, NCEI-MS, World Data Center (WDC) facility, Other, To Be Determined, Unable to Archive, or No Archiving Intended)

To Be Determined

8.1.1. If World Data Center or Other, specify:

8.1.2. If To Be Determined, Unable to Archive or No Archiving Intended, explain:

Reviewing options for data archiving.

8.2. Data storage facility prior to being sent to an archive facility (if any):

NMFS Office Of The Chief Information Office - Largo, MD

NMFS OCIO ITC

8.3. Approximate delay between data collection and submission to an archive facility:

To Be Determine

8.4. How will the data be protected from accidental or malicious modification or deletion prior to receipt by the archive?

Discuss data back-up, disaster recovery/contingency planning, and off-site data storage relevant to the data collection

We house copies of the data on an internal server maintained by NOAA ITC. The NOAA OCIO ITC is responsible for the IT security and contingency plan for data stored on their networks. The NOAA OCIO ITC establishes procedures and policies required for the recovery and restoration of data destroyed or loss.

9. Additional Line Office or Staff Office Questions

Line and Staff Offices may extend this template by inserting additional questions in this section.